



# Non-destructive analysis of oxygen transmission rate of wine packaging

## What is it?

The AWRI has developed a brand new method for directly measuring closure oxygen transmission rate (OTR) whilst it is in the bottle and in contact with wine. This method accurately measures the real OTR of closures that are influenced by contact with wine such as those comprising natural cork. The AWRI has recently taken out a provisional patent on the method.

Packaging technologies such as bag-in-the-box can also be analysed, non-destructively, for the OTR of the packaging.

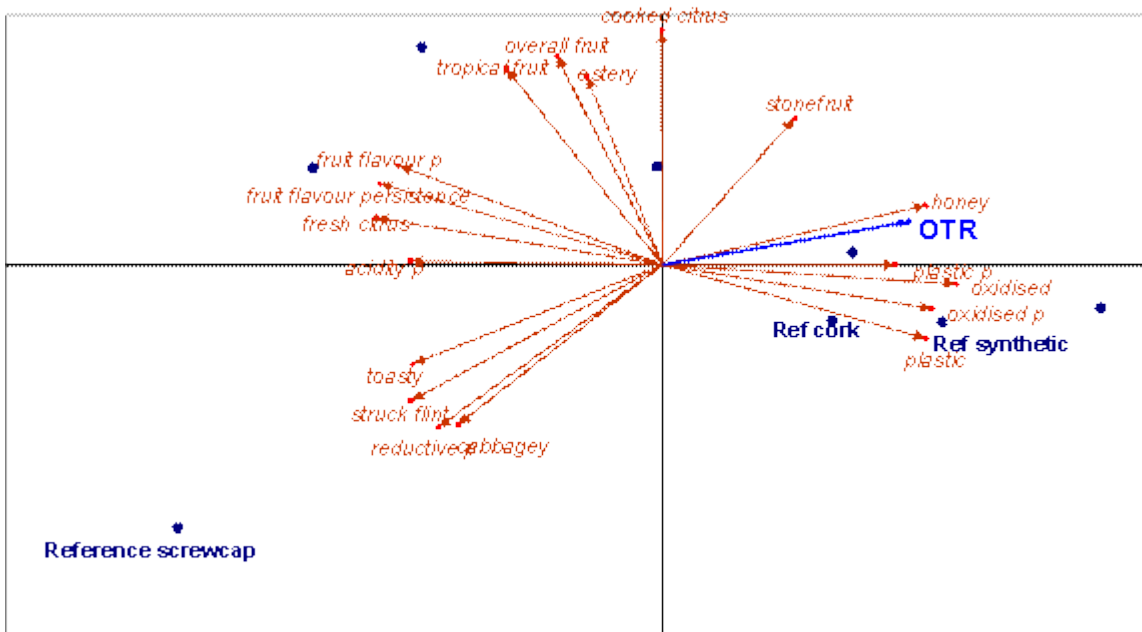
## Why is it important?

Since 1999, the AWRI has conducted several robust closure trials and these have shown that the evolution of white wine style post-bottling is driven primarily by the closure OTR. Over a defined shelf life:

- very low OTR values can lead to the development of reductive attributes in the wine if appropriate precursors are present;
- low OTR values lead to retention of fresh fruit characters;
- moderate OTR values have elevated cooked and stewed fruit characters; and
- high OTR values lead to oxidised characters developing

To our knowledge traditional tools to quantify OTR, such as those using the MOCON technology, cannot characterise the oxygen transmission properties of a prepackaged wine in contact with the packaging. In many packaging technologies this impacts on the values obtained, particularly in natural cork based closures.

In a recent closure trial, the closure OTRs were determined by the new method. The high OTR closures correlated well with the oxidised characters (honey, plastic, stone fruit) while the low OTR closures connected with the reduced characters (cabbage, struck flint, toasty), as shown below.



The new AWRI OTR tool produces results that correlate extremely well with the observed impact of closures in our closure trials.

### What does the analysis cost?

The cost for the analysis is as follows:

- 1-3 samples - \$375/sample
- 4-7 samples - \$285/sample
- and 8+ samples - \$255/sample.

Prices are ex GST and a \$25 Sample Handling fee applies to each invoice.

### Where can I find out more?

For further information on the AWRI's OTR method please contact us:

#### Commercial Services

**Phone** 08 8303 6600

**Fax** 08 8303 6601

**Email** [CommercialServices@awri.com.au](mailto:CommercialServices@awri.com.au)

**Website** [http://www.awri.com.au/commercial\\_services/packaging/bottling\\_line\\_proficiency/](http://www.awri.com.au/commercial_services/packaging/bottling_line_proficiency/)

**Address** Wine Innovation Central Building, corner of Hartley Grove and Paratoo Road, Urrbrae (Adelaide), South Australia 5064